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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,067	11/07/2001	Yasuyuki Kusumoto	011454	4732

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EXAMINER

MARTIN, ANGELA J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

5A

Office Action Summary	Application No.	Applicant(s)	
	09/986,067	KUSUMOTO ET AL.	
	Examiner	Art Unit	
	Angela J. Martin	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 5-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the Amendment filed on February 24, 2004. The Applicant has added new claims 13-17; claims 5-12 were withdrawn from consideration in the previous Office Action. Claims 1-4 and 13-17 are pending. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchikawa et al., Japanese Pat. No. 2000-243392, in view of Linden, Handbook of Batteries.

Rejection of claims 1-4 and 13-16 drawn to a non-aqueous electrolyte battery.

Uchikawa et al., teach a non-aqueous electrolyte battery comprising a positive electrode (p. 1 of 11, machine translation, sect. 0001), a negative electrode which is lithium metal (p. 6 of 11, machine translation, sect. 0042), and a non-aqueous electrolyte using an organic solvent (p. 6 of 11, machine translation, sect. 0042),

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wherein the positive electrode contains at least ferrite (p. 3 of 11, machine translation, sect. 0016). It also teaches the ferrite is CoFe_2O_4 (p. 1 of 11, machine translation, claim 6). In addition, it teaches the battery is a secondary battery wherein discharge/charge is repeatedly performed (rechargeable) (p. 1 of 11, machine translation, claim 8). Additionally, it teaches the ferrite is Fe_3O_4 , MnFe_2O_4 , and NiFe_2O_4 (p. 3 of 11, machine translation, sect. 0017). In addition, the Fe_2O_3 would be present in equilibrium with the Fe_3O_4 in solution.

Uchikawa et al., do not teach the negative electrode is a lithium alloy.

Linden teaches that lithium metal used as a negative electrode material has "persistent safety problems" (p. 36.5, para. 2-5) and that lithium-alloy anodes are "considered safer than metallic lithium" (p. 36.19, Table 36.10).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Linden into the teachings of Uchikawa et al., because the lithium metal anode is not as safe as the lithium-alloy anode. Therefore one of ordinary skill would be motivated to employ lithium-alloy as the negative electrode active material of the non-aqueous electrolyte battery.

3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al., Solid State Ionics, in view of Linden, Handbook of Batteries.

The Applicant teaches a non-aqueous electrolyte battery as described in claim 1, wherein the positive electrode contains at least one ferrite, wherein the ferrite is $K_{1.4}Fe_{11}O_{17}$.

Ito et al., teach a non-aqueous electrolyte battery (abstract) provided with a positive electrode, a negative electrode (p. 18, para. 2), and a non-aqueous electrolyte using an organic solvent (p. 18, para. 2), wherein lithium is used as a negative electrode (p. 18, para. 2), and the positive electrode contains at least one ferrite, wherein the ferrite is $K_{1.4}Fe_{11}O_{17}$ (p. 17, para. 1).

Ito et al., do not teach the negative electrode is a lithium alloy.

Linden teaches that lithium metal used as a negative electrode material has "persistent safety problems" (p. 36.5, para. 2-5) and that lithium-alloy anodes are "considered safer than metallic lithium" (p. 36.19, Table 36.10).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Linden into the teachings of Ito et al., because the lithium metal anode is not as safe as the lithium-alloy anode. Therefore one of ordinary skill would be motivated to employ lithium-alloy as the negative electrode active material of the non-aqueous electrolyte battery.

Response to Arguments

4. Applicant's arguments filed on February 24, 2004 have been fully considered but they are not persuasive. The Applicant argues that Uchikawa et al., disclose using a "ferrite for utilizing a waste material." However, the Examiner requested an oral translation of paragraph 0015 of Uchikawa et al., and the translator did not interpret the translation as "waste material" and translated the claim 1 and paragraph 0039 as "ferrite in the positive electrode. Examiner has requested a full written translation of Uchikawa et al.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJM


Patrick Ryan
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Technology Center 1700